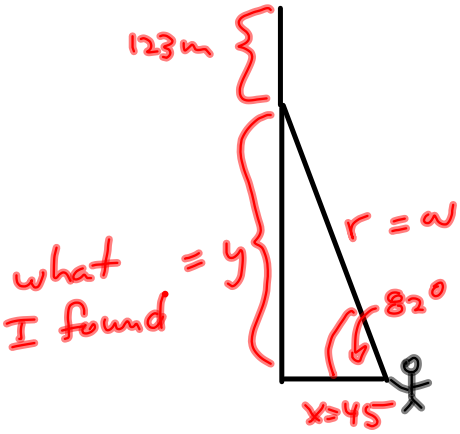
S1.4 #s 1-8all, 9-97
Due monday #67?

S1.3 #67

Standing 45 meters from bldg.
Angle of elevation 82° to Friend on 86th floor
How far to your friend? 123 m to the top from 86th floor.

My solutions: I just tried to say how tall the bldg was. Totally missed the question. So grain of salt on my solutions.



$\frac{y}{45} = \tan 82^\circ$

$y = 45 \tan 82^\circ$

≈ 320.1916375 m

≈ 320 m

∴ Height of Bldg is about 443 m.

$\frac{45}{r} = \cos 82^\circ \Rightarrow$

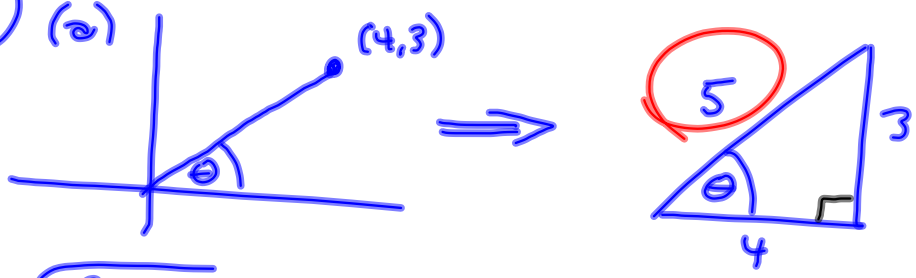
$\frac{45}{\cos 82^\circ} = r \approx 323.338344 \approx 323$ m

Seamus.
Bryan

§1.4 Start

#s 9-12 Find EXACT value of 6 trigs.

(9) (a)



$r = \sqrt{3^2 + 4^2} = 5$

$\sin\theta = \frac{3}{5}$ $\quad \csc\theta = \frac{5}{3}$

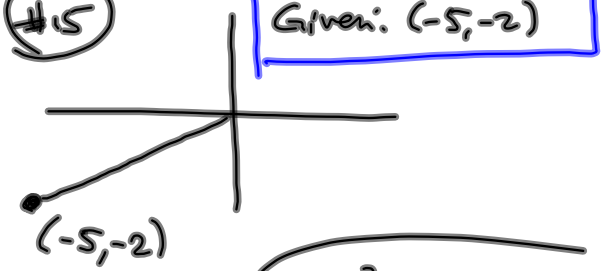
$\cos\theta = \frac{4}{5}$ $\quad \sec\theta = \frac{5}{4}$

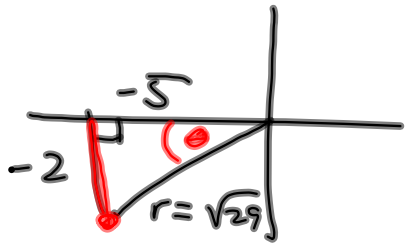
$\tan\theta = \frac{3}{4}$ $\quad \cot\theta = \frac{4}{3}$

#s 13-18 The point is on the terminal side of an angle in std position. Find Exact 6 trigs. Julio's listening

#15

Given: $(-5,-2)$





$\sqrt{(-2)^2 + (-5)^2} = \sqrt{29} = r$

Marlq

$\sin\theta = -\frac{2}{\sqrt{29}} \cdot \frac{\sqrt{29}}{\sqrt{29}} = -\frac{2\sqrt{29}}{29}$

$\cos\theta = -\frac{5}{\sqrt{29}}$

$\tan\theta = \frac{2}{5}$

$\sin^{-1}$, $\cos^{-1}$, $\tan^{-1}$ keys on calculator are INVERSE TRIG FUNCS.

To do things like $\cot\theta$,

① $\tan\theta$

② $1/$ ANSWER

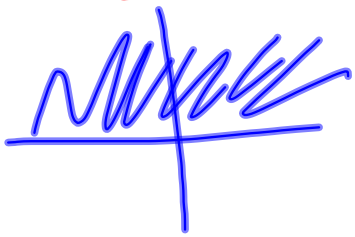
Inverse Trigs do this:

$\sin(30^\circ) = \frac{1}{2}$

$\sin^{-1}\left(\frac{1}{2}\right) = 30^\circ$

#s 19-22 Determine the quadrant in which the (terminal side of the) angle lies.

(19) y's $\sin\theta > 0$ AND x's $\cos\theta > 0$



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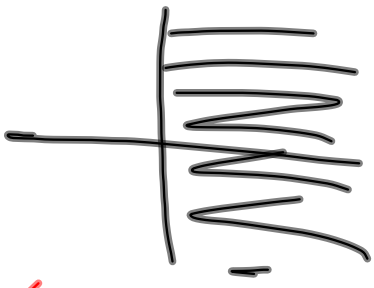
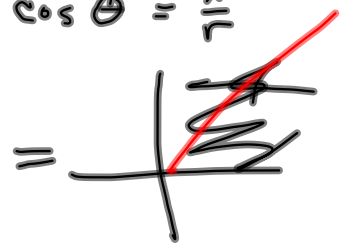


$\sin\theta = \frac{y}{r}$

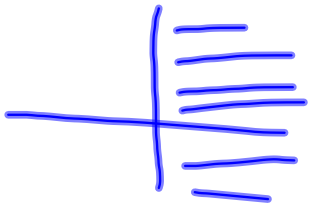
$\cos\theta = \frac{x}{r}$



$=$ QI

(22) $\sec\theta > 0$ & $\cot\theta < 0$ negative

$\frac{1}{\cos\theta}$ $\quad\frac{\cos\theta}{\sin\theta} = \frac{x/r}{y/r} = \frac{x}{y}$



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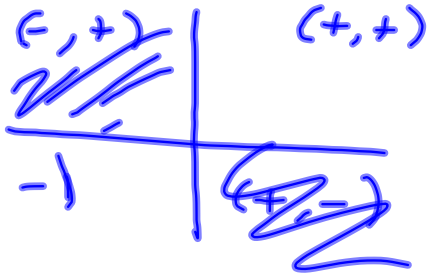
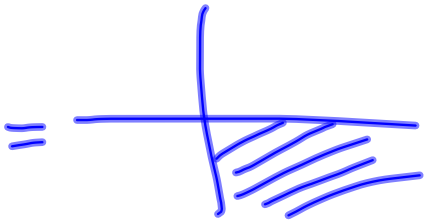
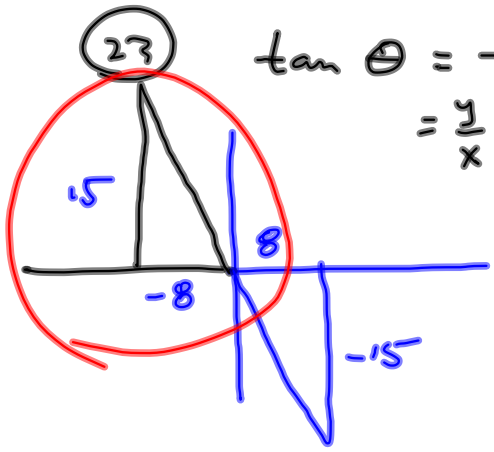


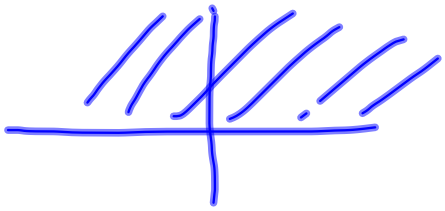


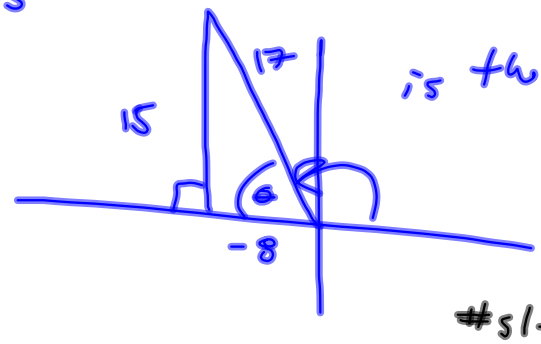
$=$ QIV

#s 23-32 Find 6 things, given the constraints.



$\tan\theta = -\frac{15}{8} = \frac{y}{x}$ & $\sin\theta > 0$





is the pic.

$\sqrt{8^2 + 15^2} = 17$

$\sin\theta = \frac{15}{17}$

$\cos\theta = -\frac{8}{17}$ etc.

$\tan\theta = -\frac{15}{8}$

#s1-8 All, 9-97 Due Monday.